FEDERAL ENERGY R & D
TASK 6: OIL, GAS & ELECTRICITY
BIBLIOGRAPHY 1975 – 1986

R – D ÉNERGÉTIQUE DU GOUVERNEMENT FÉDÉRAL
ACTIVITÉ 6: PÉTROLE, GAZ ET ÉLECTRICITÉ
BIBLIOGRAPHIE 1975 – 1986

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BIBLIOGRAPHIE 1975-1986

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PREFACE

This report, entitled FEDERAL ENERGY R&D TASK 6, OIL, GAS & ELECTRICITY, BIBLIOGRAPHY 1975-1986 (OERD 86-02), has been compiled principally for the information of members of the oil and gas community interested in the published results of work supported by the federal interdepartmental Panel on Energy R&D (PERD).

A broader perspective on the scope and accomplishments of the PERD Program across all energy supply and demand topics, excepting nuclear fission, is available on request from the Office of Energy R&D (OERD) in the 1986 GUIDE TO THE FEDERAL PANEL ON ENERGY RESEARCH AND DEVELOPMENT ACTIVITIES OF THE GOVERNMENT OF CANADA (OERD 86-01) and in AN ASSESSMENT OF THE ECONOMIC AND SUPPLY BENEFITS FROM THE ENERGY R&D PROGRAM ADMINISTERED BY THE FEDERAL INTERDEPARTMENTAL PANEL ON ENERGY R&D (OERD 85-03P).

As the next step in communicating the results of the PERD Program, OERD is now initiating Canada's participation in the Energy Technology Data Exchange of the International Energy Agency (IEA) which is managed by the US DOE. When completed, this will allow Canadians electronic access to the abstracts of publications of all future energy R&D in major IEA member countries, including Canada.

PERD activity in electrical R&D consists largely of a federal contribution to the R&D program of the Canadian Electrical Association (CEA) which is conducted with utilities and associated industry. References in this bibliography to electrical R&D reports do not, however, include the many CEA reports as these are already accessible through the CEA's DIGEST OF ELECTRIC UTILITY RELATED RESEARCH IN CANADA, the ELECTRIC POWER DATABASE (EPD) of the Electric Power Research Institute (EPRI) in Palo Alto, California, and the on-line CAN/OLE computer system of the Canada Institute for Scientific and Technical Information (CISTI).

PERD funding for oil and gas R&D was initiated in 1981-1982, with the exception of transportation-related subjects which started in 1975. PERD resources augment existing budgets of several federal Departments in order that they may establish, in their particular areas of expertise, the technical basis for the Government to meet its legislated responsibilities in oil and gas development. These Departments contract out about 70% of PERD resources through Supply and Services Canada (SSC/DSS), which publishes requests-for-proposals and lists contract awards under the names of these Departments in the monthly SSC RESEARCH AND DEVELOPMENT BULLETIN.

This bibliography, therefore, cites a wide affiliation of authors and quotes reports which have been closely coordinated and, in many cases, co-funded with industry, with the base budgets of several Departments, and with targetted programs. The latter include the Arctic Marine Transportation R&D Program coordinated by Transport Canada, the Environmental Studies Revolving Funds (ESRF) coordinated by the Canada Oil and Gas Lands Administration, the Frontier Geoscience Program (FGP) of the Geological Survey of Canada, and the Northern Oil and Gas Action Program (NOGAP) coordinated by Indian and Northern Affairs Canada.

Although it has not been possible to recognise these contributions in each citation, I welcome this opportunity to acknowledge their importance in achieving PERD's objectives and to encourage continued cooperation to sustain R&D activity vital to Canada's economic future.

K. Whitham
Chairman, Panel on
Energy R&D

PRÉFACE

Le présent rapport intitulé R-D ÉNERGÉTIQUE DU GOUVERNEMENT FÉDÉRAL, ACTIVITÉ 6, PÉTROLE, GAZ ET ÉLECTRICITÉ, BIBLIOGRAPHIE DE 1975 À 1986 (BRDE 86-02) s'adresse principalement à tous les membres de l'industrie pétrolière et gazière qui s'intéressent aux résultats publiés des travaux appuyés par le Comité interministériel de la recherche et du développement énergétiques (CIRDE).

Une perspective plus vaste de la portée et des réalisations du Programme du CIRDE en ce qui concerne tous les sujets reliés à l'offre et à la demande d'énergie, sauf la fission nucléaire, se trouve dans le Guide des activités du Comité interministériel de la recherche et du développement énergétiques du gouvernement fédéral (1986) (BRDE 86-01) et dans une évaluation des avantages économiques et énergétiques liés au Programme de R-D énergétique administré par le Comité interministériel de R-D énergétique (BRDE 85-03P). Ces deux documents sont disponibles sur demande du Bureau de la recherche et du développement énergétiques.

Afin de passer à la prochaine étape visant à communiquer les résultats du Programme du CIRDE, le BRDE entreprend actuellement au nom du Canada de participer à l'échange de données techniques sur l'énergie de l'Agence internationale de l'énergie (AIE) qui est administrée par le ministère de l'Énergie des États-Unis. Aussi, les Canadiens auront accès aux résumés des publications de tous les futurs travaux de recherche et de développement énergétiques dans les principaux pays membres de l'AIE, y compris le Canada.

En ce qui concerne la recherche et le développement en matière d'électricité, le CIRDE contribue surtout, au nom du gouvernement fédéral, au Programme de recherche et de développement de l'Association canadienne de l'électricité (ACE) exécuté avec les services publics et l'industrie. Dans la présente bibliographie, les références aux rapports de R-D dans le domaine de l'électricité ne comprennent cependant pas de nombreux rapports de l'ACE, ceux-ci étant déjà accessibles dans le "Digest of Electric Utility Related Research in Canada" de l'Association canadienne de l'électricité, dans l'"ELECTRIC POWER DATABASE" (EPD) du "Electric Power Research Institute" (EPRI), Palo Alto, Californie, et dans le système informatique en direct CAN/OLE de l'Institut canadien de l'information scientifique et technique (ICIST).

Le CIRDE a commencé à financer la recherche et le développement pétroliers et gaziers en 1981-1982, sauf pour ce qui est des questions liées au transport, lesquelles étaient financées depuis 1975. Les ressources du CIRDE s'ajoutent aux budgets actuels de plusieurs ministères fédéraux de sorte qu'ils puissent établir, dans leur domaine particulier de compétence, les connaissances techniques de base permettant au gouvernement de remplir ses responsabilités en matière de mise en valeur du pétrole et du gaz. Environ 70 % des travaux du CIRDE sont effectués au titre de contrats accordés par Approvisionnements et Services Canada qui publie des demandes de proposition et la liste des entrepreneurs sous les noms de ces ministères dans le bulletin mensuel de recherche et de développement d'Approvisionnements et Services Canada.

La présente bibliographie cite par conséquent bon nombre d'auteurs et des rapports qui ont été préparés en étroite collaboration avec l'industrie et, dans bien des cas, financés conjointement par le gouvernement et l'industrie, à même les budgets de base de plusieurs ministères dans le cadre de programmes cibles. Ces derniers comprennent le Programme de recherche et de développement en transport maritime dans l'Arctique, coordonné par Transport Canada, le Fonds renouvelable pour l'étude de l'environnement, coordonné par l'Administration du pétrole et du gaz des terres du Canada, le Programme géoscientifique pour l'énergie des régions pionnières, de la Commission géologique du Canada, et le Programme d'initiatives pétrolières et gazières dans le Nord, coordonné par les Affaires indiennes et du Nord du Canada.

Bien qu'il ait été impossible de remercier dans cette bibliographie tous ceux qui ont participé à ces programmes, je profite de l'occasion pour souligner l'importance de leur contribution à la réalisation des objectifs du CIRDE et demander leur collaboration continue pour le maintien de l'activité de R-D qui est d'importance vitale pour l'avenir économique du Canada.

K. Whitham
Président, Comité
interministériel de la recherche
et du développement énergétiques

DISCLAIMER

This bibliography was prepared for the Office of Energy R&D (OERD) of Energy, Mines and Resources (EMR) based on the best information available from internal management systems. Any errors or omissions should be addressed to:

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DÉNI DE RESPONSABILITÉ

La présente bibliographie a été préparée pour le Bureau de recherche et de développement énergétiques du ministère de l'Énergie, des Mines et des Ressources, à partir des meilleurs renseignements connus dans les réseaux de gestion interne. Veuillez faire part de toute erreur ou omission à:

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INTRODUCTION

This bibliography cites reports produced from the eight programs funded by the federal Panel on Energy R&D which comprise PERD Task 6: Oil, Gas, Electricity. It attempts to be complete and retrospective to 1975. Its main coverage, however, is from 1981/82 to 1985/86, reflecting a period of major funding for coordinated interdepartmental R&D activity in oil and gas.

Managing Departments include Energy, Mines and Resources, Environment Canada, the Canada Oil and Gas Lands Administration, Transport Canada, Fisheries and Oceans, Public Works Canada, and the National Research Council.

The principal objective of PERD Task 6 is to ensure, through R&D, that there is sufficient technical knowledge for the federal government to discharge its policy, service, regulatory and jurisdictional responsibilities relating to the supply of light-medium crude oil, natural gas and electricity. A secondary objective is to complement industry by providing technological support for maintaining near-term security in domestic light-medium crude oil and natural gas supply. The major emphasis is on hydrocarbon development in Canada's energy frontiers.

This bibliography classifies reports by program, subprogram and year, prefacing each list with the objective to which the R&D was directed.

Each reference attempts to provide sufficient information for the reader to be able to locate a copy of the report, even though it may be internal, or the product of an ad hoc workshop, seminar or conference. Indeed, it is hoped that one of the values of this bibliography is to provide access to a considerable body of "grey literature". Addresses have been appended for the departments or divisions that are primarily responsible for the majority of publications listed here. If this information proves to be insufficient, further assistance may be obtained from Bryan Cook at the Office of Energy R&D, EMR (613-995-9351 ext. 214).

Acronyms are defined at the back of the bibliography. The symbol (R) following a reference indicates that distribution of the report is restricted. An asterisk (*) following the reference indicates that it provides the reader with information on access to bibliographies in related fields.

INTRODUCTION

La présente bibliographie cite des rapports préparés à partir des huit programmes financés par le Comité interministériel de recherche et de développement énergétiques qui comprend l'activité 6: Pétrole, gaz et électricité. La présente bibliographie se veut complète et remonte à 1975. Cependant, elle couvre surtout la période de 1981-1982 à 1985-1986, durant laquelle l'activité interministérielle de recherche et de développement a reçu un financement important dans le domaine du pétrole et du gaz.

Les ministères intéressés comprennent Énergie, Mines et Ressources, Environnement Canada, l'Administration du pétrole et du gaz des terres du Canada, Transport Canada, Pêches et Océans, Travaux publics Canada ainsi que le Conseil national de recherches.

Le principal objectif de l'activité 6 du CIRDE consiste à veiller, grâce à la recherche et au développement, à ce que le gouvernement fédéral dispose de renseignements techniques suffisants pour pouvoir remplir ses fonctions de réglementation, de prévision, de prestation de services et d'établissement de politiques concernant l'approvisionnement en gaz naturel et en électricité, et en pétrole brut de densité moyenne et faible. Un objectif secondaire consiste à aider l'industrie en lui fournissant le soutien technologique nécessaire pour maintenir la sécurité des approvisionnements en pétrole brut de densité moyenne et faible et en gaz naturel. Une importance particulière est accordée à la mise en valeur des hydrocarbures dans les régions pionnières du Canada.

La présente bibliographie classifie les rapports par programme, sous-programme et année, chaque liste étant précédée de l'objectif des travaux de recherche.

Chaque référence tente de fournir suffisamment de renseignements au lecteur pour qu'il soit capable de trouver un exemplaire d'un rapport même si celui-ci est un document interne, ou le résultat d'un atelier, séminaire ou conférence ad hoc. En effet, l'un des mérites anticipés de cette bibliographie consiste à permettre l'accès à un grand nombre de publications souvent difficiles à retiacer. Les adresses ont été ajoutées en ce qui concerne les ministères ou les divisions qui sont les premiers responsables de la plupart des publications énumérées ici. Si ces renseignements ne sont pas suffisants, prière de communiquer avec Bryan Cook, du Bureau de R-D énergétique (EMR) pour de plus amples informations (613-995-9351, poste 214).

Les acronymes sont définis à la fin de la bibliographie. Le symbole (R) suivant une référence indique que la diffusion du rapport est restreinte.

Une astérisque (*) suivant la référence indique que celle-ci donne au lecteur des renseignements sur l'accès à des bibliographies dans des domaines connexes.

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Activité 6 **Référence générale**

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Office of Energy Research and Development. 1986 GUIDE TO THE FEDERAL PANEL ON ENERGY RESEARCH AND DEVELOPMENT ACTIVITIES OF THE GOVERNMENT OF CANADA. OERD 86-01, 18 pp., July, 1986.

6.1.1/ 6.1.3 Geoscientific R&D: Reservoir Characterization
R-D en géoscience: Définition des caractéristiques des gisements

To improve the definition of conventional oil and gas resources by developing geological models that benefit both exploration and exploitation phases in Canadian basins, and by developing and applying innovative geological and geophysical techniques required in geological modelling.

Donner une meilleure définition des sources classiques de pétrole et de gaz par la mise au point de modèles géologiques qui serviront à la fois pour l'exploration et l'exploitation des bassins canadiens et par l'élaboration et la mise en oeuvre de techniques géologiques et géophysiques innovatrices requises pour la modélisation géologique.

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6.1.2/ Geoscientific R&D: Gas Hydrates and Permafrost
6.1.4 R-D en géoscience: Hydrates de gaz et pergélisol

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Définir le comportement et la répartition des hydrates dans le but d'évaluer les risques dans les puits d'exploration et d'exploitation et d'évaluer les possibilités d'utiliser les hydrates comme sources nouvelles de gaz naturel. Rassembler des données sur les conditions du pergélisol terrestre et marin afin de faciliter la conception, la construction, l'évaluation et la réglementation des systèmes de production et de transport du pétrole.

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Génie maritime: Élaboration de critères de conception technique en fonction des facteurs environnmentaux

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Mettre au point et perfectionner des modèles, méthodes et techniques nécessaires à l'élaboration de critères de conception technique et environnementale qui seront intégrés au règlement de l'APGTC sur les systèmes d'exploration et d'extraction des hydrocarbures en milieu marin.

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6.2.2 Marine Engineering: Safety Technology for Marine Structures
Génie maritime: Mesures de sécurité et de sauvetage des installations maritimes

To research and develop improved technologies and techniques required to save lives under marine hydrocarbon exploration and production conditions.

Étudier et mettre au point des techniques améliorées de sauvetage au cours de l'exploration et de l'exploitation des hydrocarbures en milieu marin.

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6.2.3 **Marine Engineering: Marine Structures Engineering R&D**
Génie maritime: Matière d'installations marines R-D

To provide the necessary engineering-related R&D for rigs and for systems employed on rigs, to enable the development of adequate regulations and procedures that will ensure safe operations in the Canadian offshore environment.

Exécuter des travaux de R-D sur divers éléments des installations de forage et les systèmes utilisés sur les installations de forage afin de mettre au point des règlements et des procédures pouvant assurer l'exploitation sûre des hydrocarbures en milieu marin au Canada.

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6.3.1 Offshore Geotechnics: Beaufort Sea
Méthodes géotechniques utilisées au large des côtes: Mer de Beaufort

To improve the knowledge of seabed conditions in the Beaufort Sea for development and regulation.

Améliorer les connaissances des conditions du fond marin dans la mer de Beaufort pour fins de mise en valeur et de réglementation.

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6.3.2 Offshore Geotechnics: Hibernia/Sable Island
Méthodes géotechniques utilisées au large des côtes: Hibernia/Île de Sable

To improve the knowledge of seabed conditions in the N.W. Atlantic for development and regulation.

Améliorer les connaissances des conditions du fond marin dans le nord-ouest de l'Atlantique pour fins de mise en valeur et de réglementation.

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6.4 Enhanced Oil Recovery
Récupération assistée

To develop the science of enhanced recovery applicable to Canadian light-medium gravity oil reservoirs.

Perfectionner la science de la récupération assistée applicable aux réservoirs canadiens de pétrole de faible et de moyenne densité.

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6.5.1 Materials for Offshore Structures: Steels and Concretes
Matériaux des installations marines: Aciers et bétons

To establish, through in-house and contract R&D, Canadian supplied steels and concretes and fabrication technologies suitable for offshore structures.

Établir, grâce à la recherche interne et au titre de contrats, des techniques de fabrication d'acier et de béton canadiens pour les installations marines.

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6.5.2 Materials for Offshore Structures: Structural Integrity Monitoring
Matériaux des installations marines: Surveillance de l'intégrité des installations

To establish techniques to detect, measure, and monitor defects and their growth in offshore structures, with the aim of developing quantitative fracture control plans to eliminate catastrophic failures.

Mettre au point des techniques destinées à déceler, à mesurer et à surveiller les défauts de structure et leur évolution dans les installations marines, afin de mettre au point des mesures quantitatives de contrôle des ruptures en vue d'éliminer les risques de ruptures catastrophiques.

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6.5.3 Materials for Offshore Structures: Cost Shared Industrial R&D
Matériaux des installations marines: Activités de R-D industrielle à frais partagés

To respond to proposals from Canadian industry to cost-share on a 50/50 basis R&D on materials and fabrication technologies suitable for pipelines and offshore structures in Canadian waters.

Répondre à l'industrie canadienne qui propose, de partager également les coûts des travaux de recherche et de développement relatifs aux matériaux et aux techniques de fabrication appropriées aux pipelines et aux installations marines dans les eaux canadiennes.

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McCutcheon, D.B. DETERMINATION OF THE ABILITY OF STELCO INGOT AND STRAND CAST STRUCTURAL PLATE TO MEET THE MECHANICAL PROPERTY REQUIREMENTS FOR CANADIAN OFFSHORE STRUCTURES AND SHIPS. Prepared for CANMET by Stelco Inc., 415 pp., June, 1985.

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6.5.4 Materials for Offshore Structures: Canadian Centre for Frontier Engineering Research (C-FER)
Matériaux des installations marines: Centre canadien de recherches techniques dans les régimes pionnières

To cost-share the establishment of a centre of excellence in research and manpower training related to materials and engineering required in developing offshore hydrocarbon resources.

Partager les coûts de l'établissement d'un centre de formation et de recherches spécialisés sur les matériaux et les techniques nécessaires à l'exploitation des hydrocarbures en milieu marin.

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6.6.1 Transportation of Oil and Gas: Oil and Gas Transportation Systems Studies
Transport du pétrole et du gaz: Études des réseaux de transport du pétrole et du gaz

To assess the general R&D requirements and technical opportunities associated with transporting oil and gas.

Évaluer les besoins généraux de R-D et les possibilités techniques liées au transport du pétrole et du gaz.

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Taylor, R.B. COASTAL RECONNAISSANCE FOR MARINE TERMINAL PLANNING IN SVERDRUP BASIN, N.W.T.: MAIN REPORT. Prepared for Strategic Studies Branch/TC by AGC, 131 pp., 1978.

6.6.2 Transportation of Oil and Gas: Arctic Navigation Support Systems
Transport du pétrole et du gaz: Systèmes de soutien à la navigation dans l'Arctique

To improve the safety and efficiency of Arctic navigation through R&D with industry on systems for ship positioning and ice-hazard detection and avoidance.

Améliorer la sécurité de la navigation dans l'Arctique grâce à des projets de R-D en collaboration avec l'industrie sur les systèmes de positionnement des navires et la détection des glaces et la façon de les éviter.

1976-1979

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Hutchins, R. ICE PHYSICS AND ACOUSTIC PROPAGATIONS RELATED TO MEASUREMENTS OF ICE THICKNESS TO DEPTH OF ICE COVERED WATERS. Prepared for DRPD by Huntec Canada Ltd., July, 1978.

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6.6.3 Transportation of Oil and Gas: Arctic Hydrography
Transport du pétrole et du gaz: Hydrographie de l'Arctique

To develop innovative systems to enable expeditious hydrographic surveys of prospective transportation corridors in the Canadian Arctic.

Mettre au point des systèmes innovateurs qui permettront d'effectuer rapidement des levés hydrographiques le long des couloirs de transport envisagés dans l'Arctique Canadien.

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6.6.4 Transportation of Oil and Gas: Atlantic Offshore Transportation
Transport du pétrole et du gaz: Forage dans l'océan Atlantique

To provide R&D support for the definition of regulations for the design, construction and operation of vessels and aircraft associated with offshore hydrocarbon development, and to develop innovative systems to enable expeditions and accurate hydrographic surveys of prospective transportation corridors over the Canadian Atlantic shelf.

Mettre en oeuvre des projets de R-D qui faciliteront l'élaboration des règlements qui régissent la conception, la construction et l'exploitation des navires et des aéronefs utilisés dans la mise en valeur des hydrocarbures en milieu marin, et mettre au point des systèmes innovateurs qui permettront d'effectuer rapidement des levés hydrographiques précis le long des couloirs de transport envisagés sur le plateau Atlantique canadien.

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Sladek, G., N.A. Irwin et al. OFFSHORE AIRPORT CONCEPTS SERVICING THE EAST COAST ENERGY RESOURCE INDUSTRY SUMMARY REPORT. Prepared for TDC by IDI Group, TP 5048, 46 pp., December, 1983.

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6.6.5 Transportation of Oil and Gas: Transporting Hazardous Energy Commodities
Transport du pétrole et du gaz: Transport des ressources énergétiques dangereuses

To research means for the safe transportation of hazardous oil and gas commodities, including risk analyses, remote sensing of hazards in their incipient stages, testing proceedures, materials and technologies.

Mettre au point des techniques susceptibles d'assurer la sûreté du transport de grandes quantités de produits dangereux à base de pétrole et de gaz, y compris l'analyse des risques, la télédétection des risques au cours de leurs phases initiales, les systèmes de recherche et les matériaux.

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6.6.6 Transportation of Oil and Gas: Arctic Class Resource Vessel Performance, Design and Safety Requirements
Transport du pétrole et du gaz: Exigences concernant la performance, la conception et la sécurité des transporteurs de ressources de cote arctique

To research means for the improvement of the in-ice and ice breaking performance of Arctic class resource carrier vessels, as a contribution to the development of Arctic Pollution Prevention Regulations and to future safe and efficient navigation in Arctic waters.

Étudier des techniques susceptibles d'améliorer la navigation dans les glaces et le rendement des transporteurs brise-glaces de cate arctique, afin de contribuer à l'élaboration des règlements pour empêcher la pollution des eaux arctiques et de favoriser la sûreté et l'efficacité de la navigation dans les eaux arctiques.

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6.7.2 Environment: Environmental Impacts
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Améliorer les techniques actuelles de réduction des impacts d'ordre environnemental et mettre au point de nouvelles méthodes d'atténuation des impacts, déceler et mesurer les impacts et surveiller les effets de l'exploitation des hydrocarbures sur le milieu.

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6.8.1. Electrical R&D: CEA R&D
R-D dans le domaine de l'électricité: Programme de R-D de l'ACE

To support the co-operative research program of the Canadian Electrical Association (CEA).

Appuyer le programme coopératif de recherche de l'Association canadienne de l'électricité (l'ACE).

CEA publications are included as part of EPD (Electric Power Database), found on CAN/OLE, CISTI/NRC.

6.8.2 Electrical R&D: Electric Power
R-D dans le domaine de l'électricité: Énergie électrique

To develop advanced technologies for the measurement and transmission of electricity.

Mettre au point des techniques de pointe afin de mesurer et de transmettre l'électricité.

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APPENDICES

ANNEXES

GLOSSARY OF ACRONYMES
GLOSSAIRE D'ACRONYMES

AES	Atmospheric Environment Service (EC)
AGC	Atlantic Geoscience Centre (GSC-EMR)
AIME	American Institute of Mechanical Engineering
AMS	American Meteorological Society
AOL	Atlantic Oceanography Laboratories (F&O)
ARD	Atmospheric Research Directorate (EC)
ASM	American Society for Metals
ASME	American Society of Mechanical Engineers
ASW	Anti-Submarine Warfare
AVHRR	Advanced High-Resolution Radiometer
AVMRI	Arctic Vessel Marine Research Institute (NRC)
BIO	Bedford Institute of Oceanography (F&O)
CANMET	Canada Centre for Mineral and Energy Technology (EMR)
CAN/OLE	Canadian On-Line Enquiry (NRC)
CASP	Canadian Atlantic Storms Program
CCC	Canadian Climate Centre (EC)
CCG	Canadian Coast Guard
CCGS	Canadian Coast Guard Ship
C-CORE	Centre for Cold Ocean Resources Engineering
CCRS	Canada Centre for Remote Sensing (EMR)
CEA	Canadian Electrical Association
CEIDP	Conference on Electrical Insulation and Dielectric Phenomena
C-FER	Centre for Frontier Engineering Research
CGNS	Coast Guard Northern Sector (TC)
CHS	Canadian Hydrographic Service (F&O)
CIGRE	Conférence Internationale de Grands Réseaux Electriques
CIM	Canadian Institute of Mining and Metallurgy
CISTI	Canada Institute of Science and Technical Information (NRC)
CMC	Canadian Meteorological Centre (EC)
CMOS	Canadian Meteorological and Oceanographic Society
COGLA	Canada Oil and Gas Lands Administration
CRREL	Cold Regions Research and Engineering Laboratories (U.S.)
CSA	Canadian Standards Association
CSEG	Canadian Society of Exploration Geophysicists
CSNDT	Canadian Society of Non-Destructive Testing
CSPG	Canadian Society of Petroleum Geology

DIAND	Department of Indian Affairs and Northern Development
DIGS	Dynamics of Iceberg Grounding and Scouring
DME	Division of Mechanical Engineering (NRC)
DOE	Department of Energy (U.S.)
DRPD	Directorate, Research Program Development (DRPD)
EARS	Emergency Acoustic Recording System
EC	Environment Canada
EMR	Energy, Mines and Resources
EOR	Enhanced Oil Recovery
EPB	Earth Physics Branch (EMR)
EPS	Environmental Protection Service (EC)
ERP	Energy Research Program (CANMET-EMR)
ESRF	Environmental Studies Revolving Funds (COGLA)
F&O	Fisheries and Oceans
FCAW	Flux-Cored Arc Welding
FNOC	Fleet Numerical Oceanographic Centre (U.S. Navy)
GIS	Geographic Information System (Geovision Corp., Canada)
GPS	Global Positioning System
GSC	Geological Survey of Canada (EMR)
HCIS	Hydrographic/Cartographic Information System (CHS-F&O)
HSLA	High-Strength Low-Alloy (Steels)
IAHR	International Association for Hydraulics Research
ICNDT	International Committee on Non-Destructive Testing
IEEE	Institute of Electric and Electronic Engineers
IIW	International Institute of Welding
IMS	International Metallographic Society
IOS	Institute of Ocean Sciences (F&O)
ISPG	Institute of Sedimentary and Petroleum Geology (GSC-EMR)
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MIZEX	International Marginal Ice Zone Experiment
MRP	Mineral Research Program (EMR)
MSL	Mineral Science Laboratories (CANMET-EMR)
MSRB	Meteorological Services Research Branch (EC)

NATO	North Atlantic Treaty Organization
NDE	Non-Destructive Evaluation
NDT	Non-Destructive Testing
NOAA	National Oceanic and Atmospheric Administration (U.S.)
NRC	National Research Centre of Canada
NWRI	National Water Research Institute (EC)
OBS	Ocean Bottom Seismometer
OERD	Office of Energy Research and Development (EMR)
OMAE	Offshore Mechanics and Arctic Engineering
OSS	Ocean Science and Surveys (F&O)
PERD	Interdepartmental Panel on Energy Research and Development
PMRL	Physical Metallurgy Research Laboratories (CANMET-EMR)
POAC	Ports and Ocean Engineering under Arctic Conditions
PRI	Petroleum Recovery Institute (GSC-EMR)
PROD	Preferred Orientation and Displacement (Lifeboat Launch System)
PWC	Public Works Canada
QDDB	Qualified Digital Data Base
R&D	Research and Development
RIM	Regional Ice Model
ROV	Remotely Operated Vehicles
SAR	Synthetic Aperture Radar
SIM	System for Ice Management
SLAR	Side-Looking Airborne Radar
SOWM	Spectral Ocean Wave Model
SPE	Society of Petroleum Engineers (U.S.)
SWAMP	Strategic Wave Modelling Program
TDC	Transportation Development Centre (TC)
TEM(S)	Transient Electro-Magnetic Sounding
TP	(Indicates Transport Canada publication series)
WIC	Welding Institute of Canada
XLPE	Cross-Linked Polyethylene

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